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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
HOLLERAN, ANNE L	

ART UNIT	PAPER NUMBER
1642	

DATE MAILED: 03/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/879,746	CHRISTY ET AL.	
	Examiner	Art Unit	
	Anne Holleran	1642	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16 and 19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16 and 19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's election of group I (claims 1-16 and 19) in the paper filed 11/3/2003 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

2. Claims 17 and 18 were canceled in the paper filed 11/3/2003.

Claims 1-16 and 19 are pending and examined on the merits.

3. Claims 11, 13 and 15 are objected to because they appear to be of the same scope, in the case of claim 11, as claim 3; in the case of claim 13, as claim 6; and in the case of claim 15, as claim 14.

Claim Rejections - 35 USC § 112

4. Claims 1-16 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 2, and 10-12 are indefinite because of the recitation "having binding specificity". The phrase "having binding specificity" is indefinite, because it appears to be comparative. However, without a recitation of what is being compared in terms of "specificity" one cannot determine the scope of the claim. Amendment to recite "an antibody that binds to a single epitope" would obviate this rejection.

Claims 5, 7, 8 and 10 are indefinite because they are drawn to antibodies that bind to an epitope that that is defined by reference to amino acid positions, without a reference to a specific protein. The term "ERB" encompasses many different proteins from different species and also encompassing different isoforms within each species. Specification of an individual protein by SEQ ID NO will obviate this rejection.

5. Claims 6, and 13-15 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not set forth in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 6, and 13-15 are drawn to monoclonal antibodies specifically identified as 14C8, 14G2, 4D2, 6B12 and 6A12 monoclonal antibodies. The specification fails to describe how to make the 14C8, 14G2, 4D2, 6B12 and 6A12 monoclonal antibodies. Furthermore, the specification fails to provide enough information for one of skill in the art to produce a monoclonal antibody with exactly the same characteristics as the 14C8, 14G2, 4D2, 6B12 and 6A12 monoclonal antibodies. Even if the specification did provide enough information for one of skill in the art to produce a monoclonal antibody with properties similar to those of the 14C8, 14G2, 4D2, 6B12 and 6A12 monoclonal antibodies, reproduction of an identical monoclonal antibody is an unpredictable event. Because it does not appear that the 14C8, 14G2, 4D2, 6B12 and 6A12 monoclonal antibodies are publicly available or can be reproducibly isolated from nature without undue experimentation, one of ordinary skill in the art cannot be assured of the ability to practice the claimed inventions. Because claims 6 and 13-15 are specifically drawn to

14C8, 14G2, 4D2, 6B12 and 6A12 monoclonal antibodies, a suitable deposit of the hybridomas producing the 14C8, 14G2, 4D2, 6B12 and 6A12 monoclonal antibodies is required, or evidence must be provided that the 14C8, 14G2, 4D2, 6B12 and 6A12 monoclonal antibodies is well known and readily available to the public, or that it is reproducible without undue experimentation.

Furthermore, unless a deposit was made at or before the time of filing, a declaration filed under the 37 C.F.R. 1.132 is necessary to construct a chain of custody. The declaration, executed by a person in a position to know, should identify the deposited hybridoma by its depository accession number, establish that the deposited hybridoma is the same as that described in the specification, and establish that the deposited hybridoma was in applicant's possession at the time of filing. Applicant is required to amend the specification to recite the accession number of the deposit, the date of deposit, a description of the deposited biological material, and the name and address of the depository. See In re Lundak, 773 F.2d. 1216, 227 USPQ 90 (CAFC 1985) and 37 CFR 1.801-1.809 for further information concerning deposit practice.

If the deposit is made under the provision of the Budapest Treaty, filing of an affidavit or declaration by applicant or assignees or a statement by an attorney of record who has authority and control over the conditions of deposit over his or her signature and registration number stating that the deposits have been accepted by an International Depository Authority under the provisions of the Budapest Treaty, that all restrictions upon public access to the deposit will be irrevocably removed upon the grant of a patent on this application and that the deposit will be replaced if viable samples cannot be dispensed by the depository is required. This requirement is

necessary when deposits are made under the Budapest Treaty as the treaty leaves this specific matter to the discretion of each member state.

If the deposits are not made under the provisions of the Budapest Treaty, then in order to certify that the deposits comply with the criteria set forth in 37 CFR 1.801-1.809 regarding availability of deposits, assurance of compliance is required. Such assurance may be in the form of an affidavit or declaration by applicants or assignees or in the form of a statement by an attorney of record who has the authority and control over the conditions of deposit, over his or her signature and registration number, averring:

(a) that all restrictions on the availability to the public of the material will be irrevocably removed upon the granting of a patent.

(b) that the material has been deposited under conditions that ensure that access to the material will be available during the pendency of the patent application to one determined by the Commissioner to be entitled thereto under 35 CFR 1.14 and 35 USC 122.

(c) that the deposited material will be stored with all care necessary to keep it viable and uncontaminated for a period of at least five years after the most recent request for the furnishing of a sample of the deposited microorganism, and in any case at least thirty (30) years after the date of a deposit or for the enforceable life of the patent, whichever is longer.

(d) that the duty to replace the deposit should the depository be unable to furnish a sample when requested due to the condition of the deposit.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 5, 7, 9, 10 and 16 are rejected under 35 U.S.C. 102(a) as being anticipated by Fuqua (Fuqua, S.A.W. et al., Cancer Res., 59: 5425-5428, 1999, Nov.).

Claims 1, 5, 7, 9, and 10 are drawn to monoclonal antibodies having binding specificity for a single epitope of the estrogen receptor-β protein. Claim 16 is drawn to a hybridoma that produces a monoclonal antibody having binding specificity for a single epitope of the estrogen receptor-β.

Fuqua teaches hybridoma ER15.64 that secretes a monoclonal antibody that binds to the amino terminus of estrogen receptor-β (see page 5425, 2nd col., and page 5427, 2nd col.). Thus, Fuqua teaches the claimed inventions.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1, 5, 7, 9, 10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa (Ogawa, S. et al. Nucleic Acids Res. 26(15): 3505-3512, 1998) in view of Roitt (Roitt, I.M. et al. Immunology, Third Edition, Mosby, St. Louis, 1993, pages 25.9-25.10).

Ogawa teaches a polyclonal antiserum that binds to the c-terminus of estrogen receptor-β and estrogen receptor-β_{cx}. Ogawa fails to teach a monoclonal antibody and fails to teach a hybridoma secreting said monoclonal antibody.

Roitt teaches methods for making monoclonal antibodies that bind to an antigen and teaches the benefits of making monoclonal antibodies instead of polyclonal antisera. One benefit is that production may be maintained indefinitely and that the resulting antibody is a pure antibody with a defined specificity.

Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have made a monoclonal antibody using the antigen of Ogawa that was used to make the polyclonal antisera of Ogawa. One would have been motivated by the fact that monoclonal antibodies may be maintained indefinitely and that the resulting antibody is a pure antibody with a defined specificity.

8. Claims 1-4, 9, 11, 12 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sar (Sar, M. et al., Endocrinology 140: 963-971, 1999) in view of Roitt (Roitt, I.M. et al. Immunology, Third Edition, Mosby, St. Louis, 1993, pages 25.9-25.10).

Sar teaches a polyclonal antiserum that binds to the c-terminus of estrogen receptor-β, and was used to detect estrogen receptor-β in histological samples of ovarian granulosa cells that have been paraffin-embedded (see page 964, 1st col.). Sar teaches a method of detectioncomprising the avidin-biotin peroxides method. Sar fails to teach a monoclonal antibody and fails to teach a hybridoma secreting said monoclonal antibody. Sar fails to expressly teach a kit comprising an antibody. With regard to claim 12, that the monoclonal antibody binds to estrogen receptor-β in a paraffin-embedded breast tissue, there is no reason of record to show that a breast tissue antigen estrogen receptor-β contains different epitopes from those of ovarian granulosa cells.

Roitt teaches methods for making monoclonal antibodies that bind to an antigen and teaches the benefits of making monoclonal antibodies instead of polyclonal antisera. One benefit is that production may be maintained indefinitely and that the resulting antibody is a pure antibody with a defined specificity.

Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have made a monoclonal antibody using the antigen of Sar that was used to make the polyclonal antisera of Sar. One would have been motivated by the fact that monoclonal antibodies may be maintained indefinitely and that the resulting antibody is a pure antibody with a defined specificity. With regard to the kit of claim 19, because Sar teaches the method using the ingredients listed in claim 19, one would have been motivated to assemble all of the ingredients of Sar with a monoclonal antibody to the estrogen receptor-β to make a kit as claimed in claim 19, because of the known benefits of increased convenience and reproducibility of kits.

9. Claims 1, 2, 5, 7, 9, 10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitchner (Mitchner, N.A. et al. Endocrinology, 140(6): 2651-2658, 1999) in view of Roitt (Roitt, I.M. et al. Immunology, Third Edition, Mosby, St. Louis, 1993, pages 25.9-25.10).

Mitchner teaches a polyclonal antiserum that binds to the amino terminus of estrogen receptor-β in GH_3 cells, and in histological samples of pituitary or ovarian cryosections (see page 2652). Mitchner fails to teach a monoclonal antibody and fails to teach a hybridoma secreting said monoclonal antibody.

Roitt teaches methods for making monoclonal antibodies that bind to an antigen and teaches the benefits of making monoclonal antibodies instead of polyclonal antisera. One benefit is that production may be maintained indefinitely and that the resulting antibody is a pure antibody with a defined specificity.

Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have made a monoclonal antibody using the antigen of Mitchner that was used to make the polyclonal antisera of Mitchner. One would have been motivated by the fact that monoclonal antibodies may be maintained indefinitely and that the resulting antibody is a pure antibody with a defined specificity.

Conclusion

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the Office should be directed to Anne Holleran, Ph.D. whose telephone number is (571) 272-0833. Examiner Holleran can normally be reached Monday through Friday, 9:00 am to 3:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne Eyler, Ph.D. can be reached at (571) 272-0871.

Anne L. Holleran
Patent Examiner
March 5, 2004

Gary L. Kunz

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